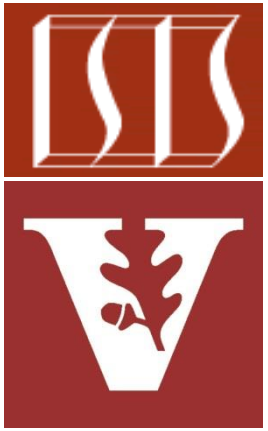
Android & Java Frameworks: Key Characteristics



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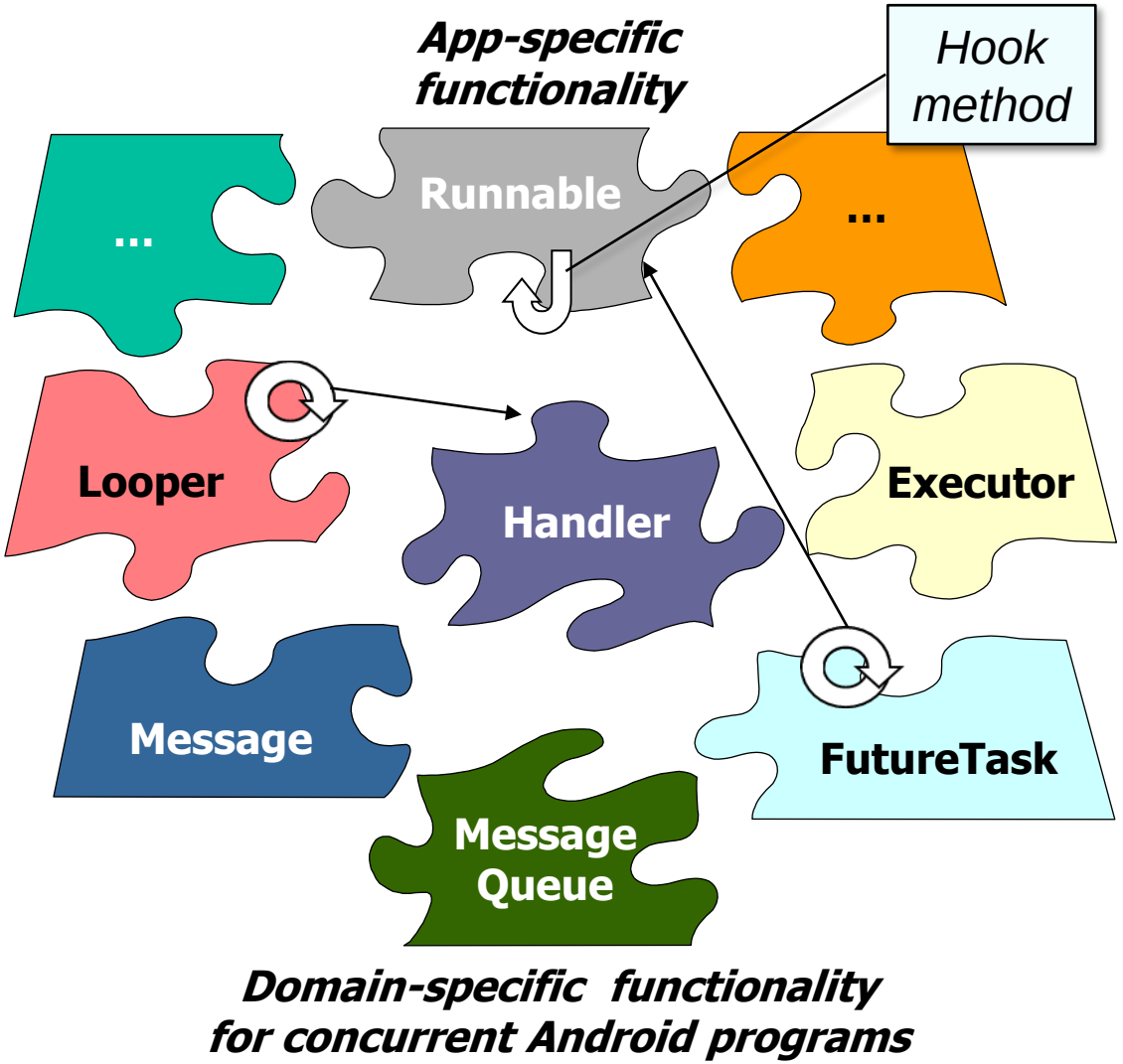
Learning Objectives in this Part of the Lesson

- Understand how software frameworks are used in Android & Java
- Identify key characteristics of Android frameworks



Key Characteristics of Android Frameworks

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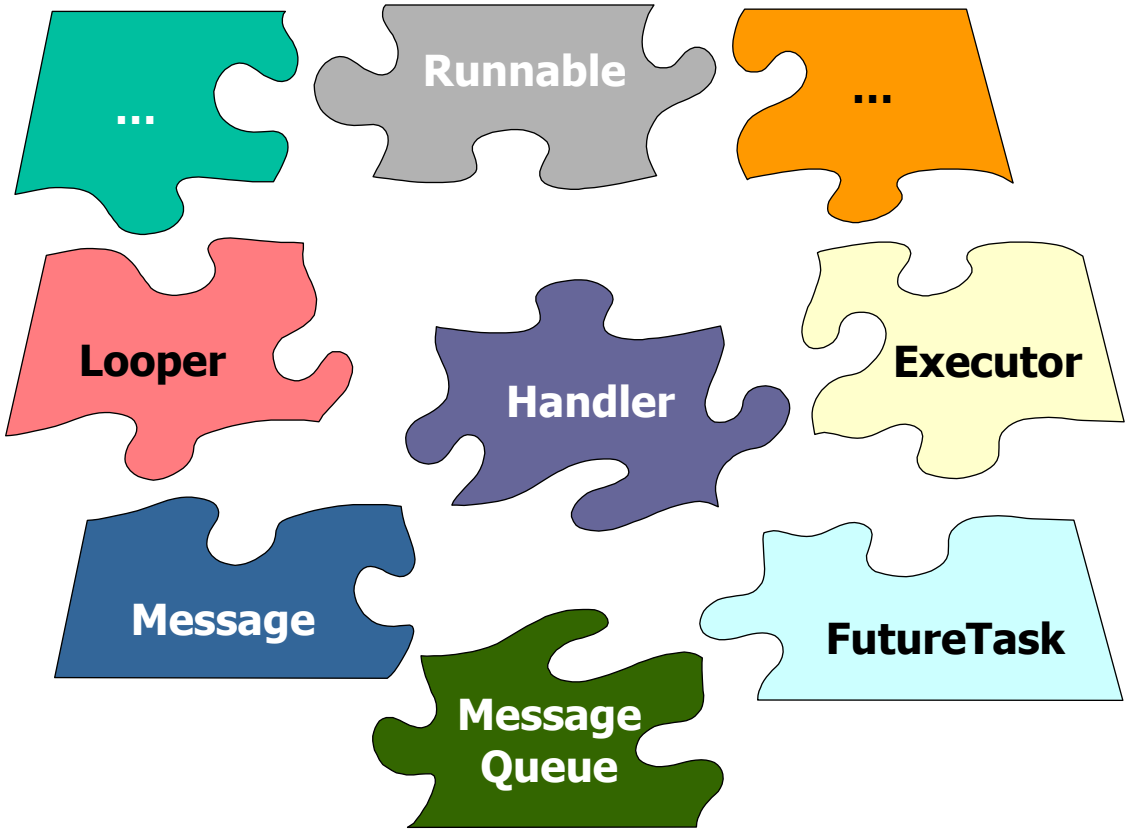

See www.dre.vanderbilt.edu/~schmidt/PDF/Queue-04.pdf

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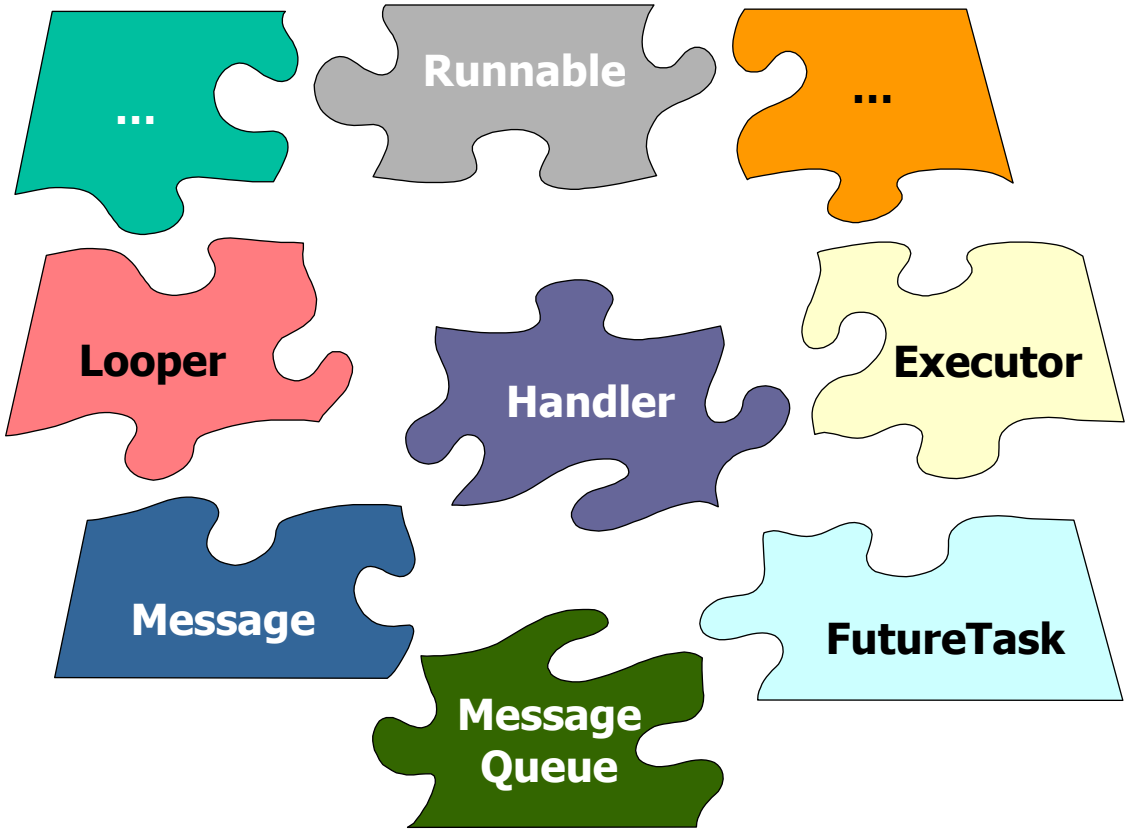

See en.wikipedia.org/wiki/Inversion_of_control & en.wikipedia.org/wiki/Callback_(computer_programming)

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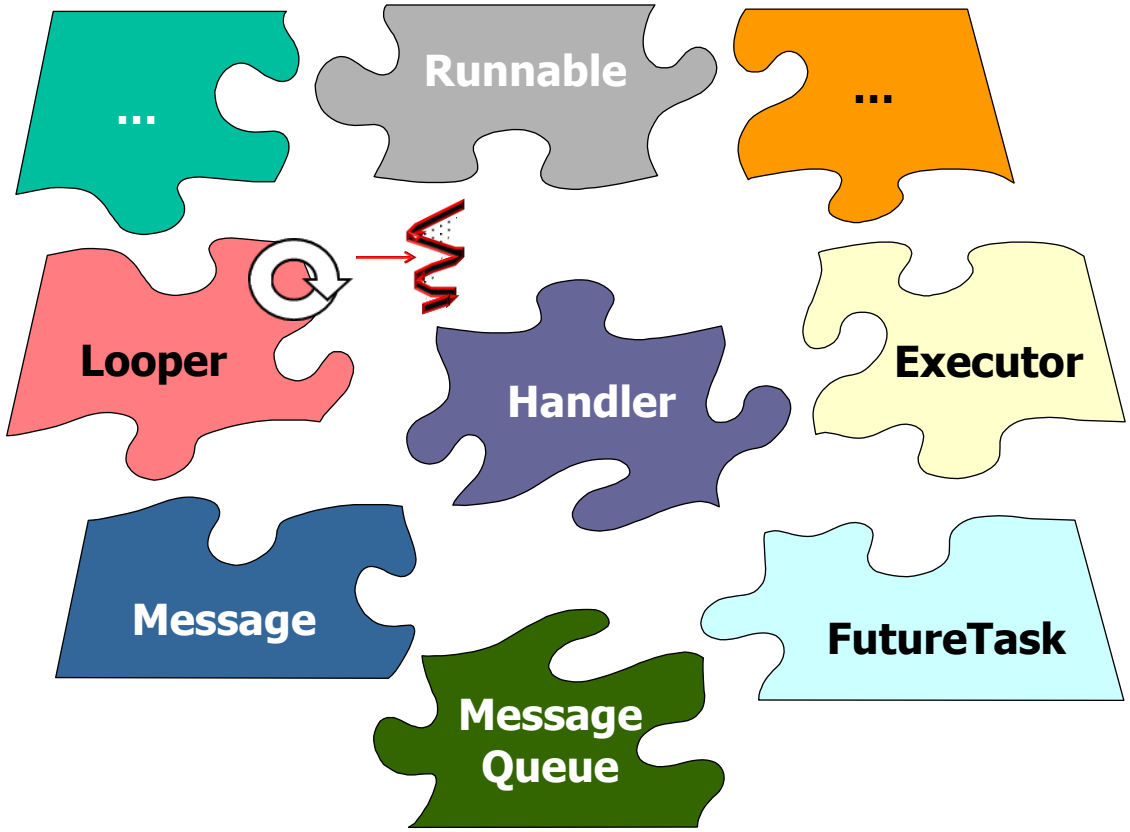
    - Framework controls the main execution thread



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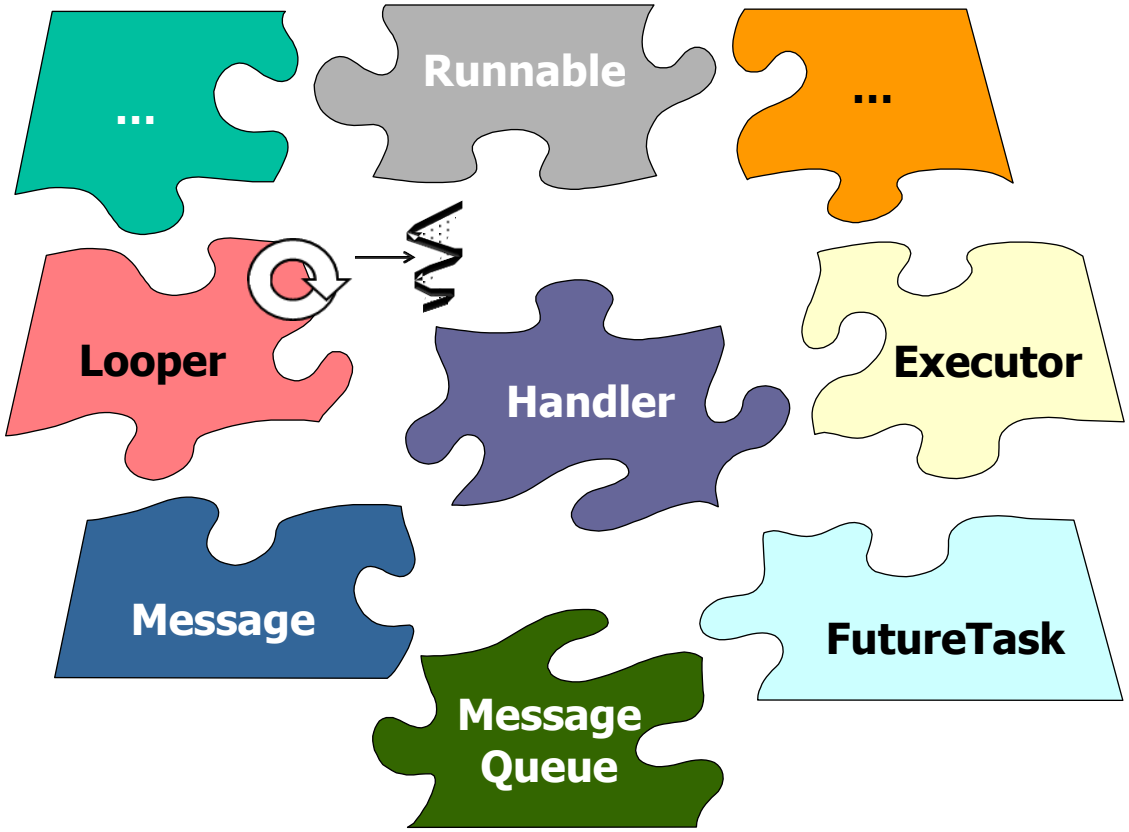

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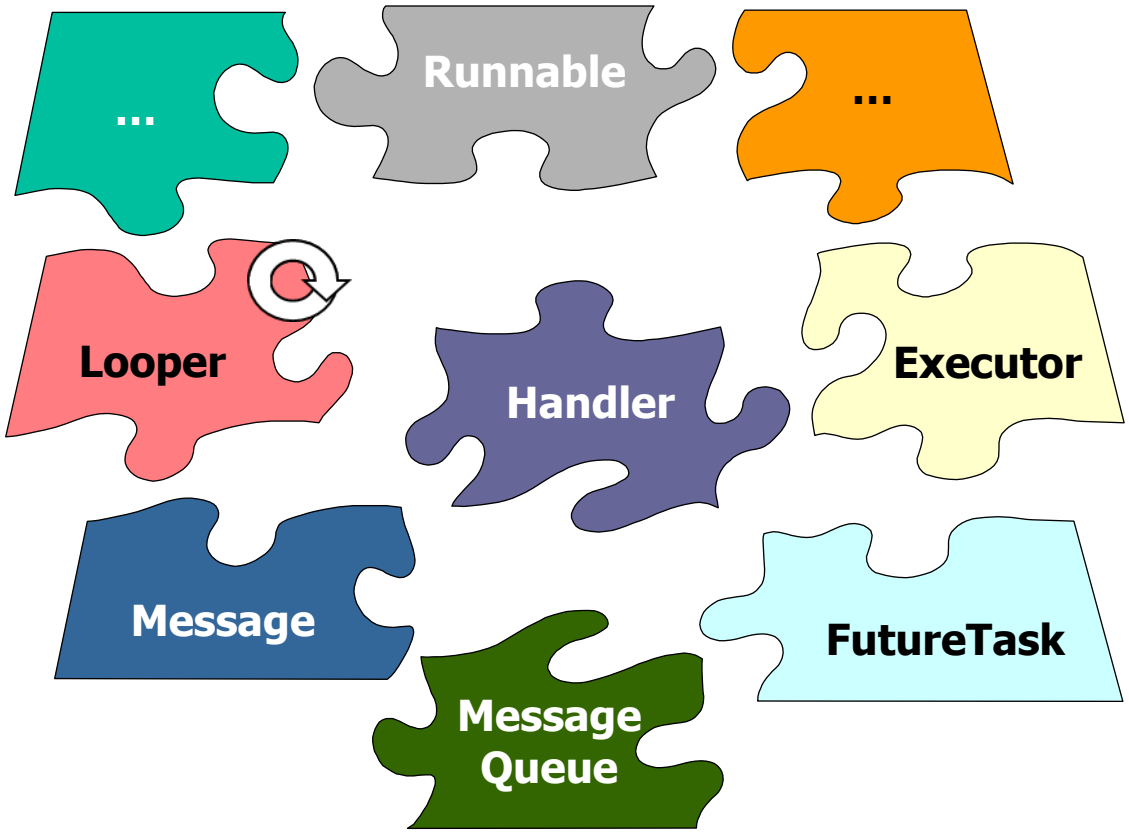
    - IoC is often called the "Hollywood Principle"



See www.dre.vanderbilt.edu/~schmidt/hollywood-principle.txt

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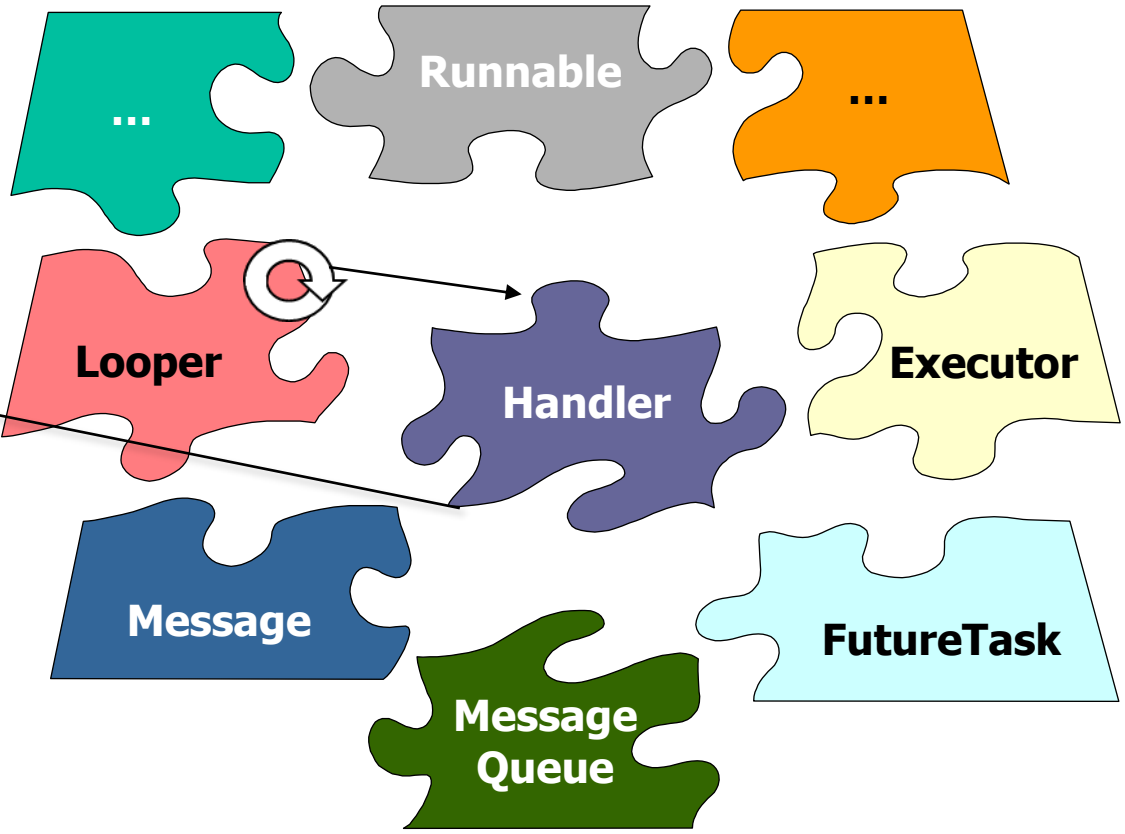

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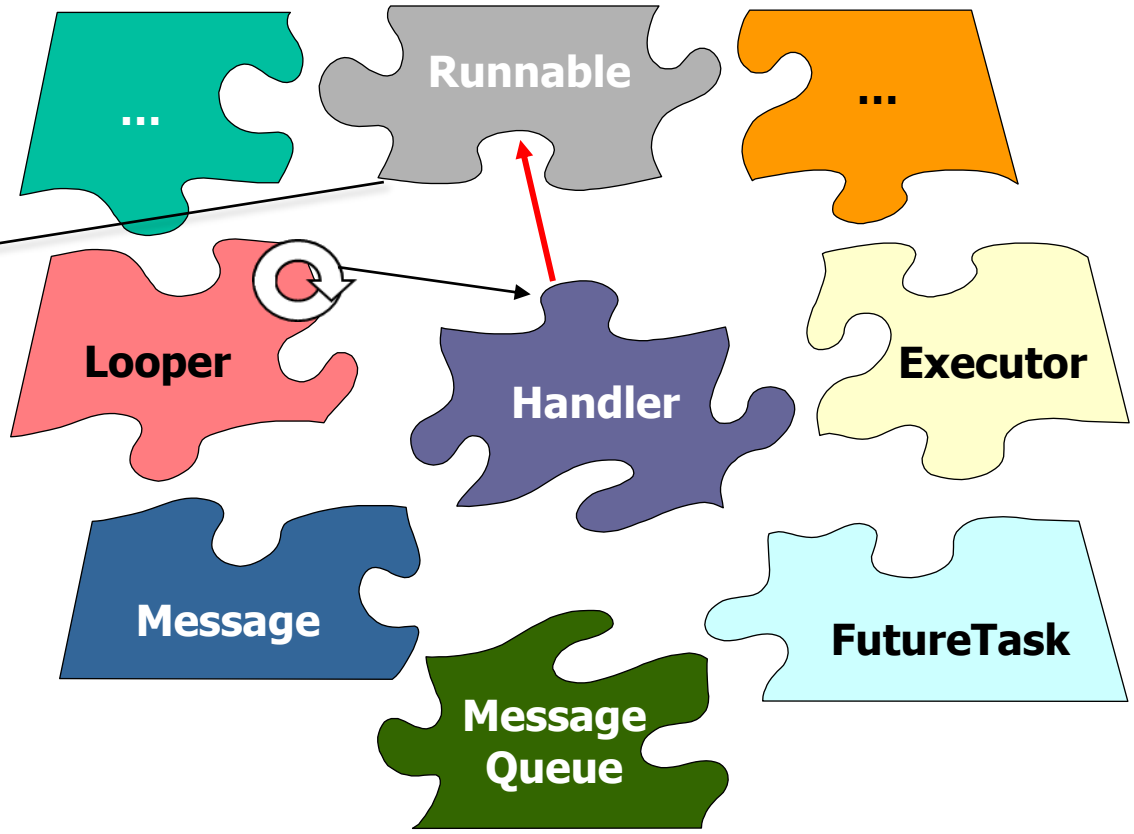

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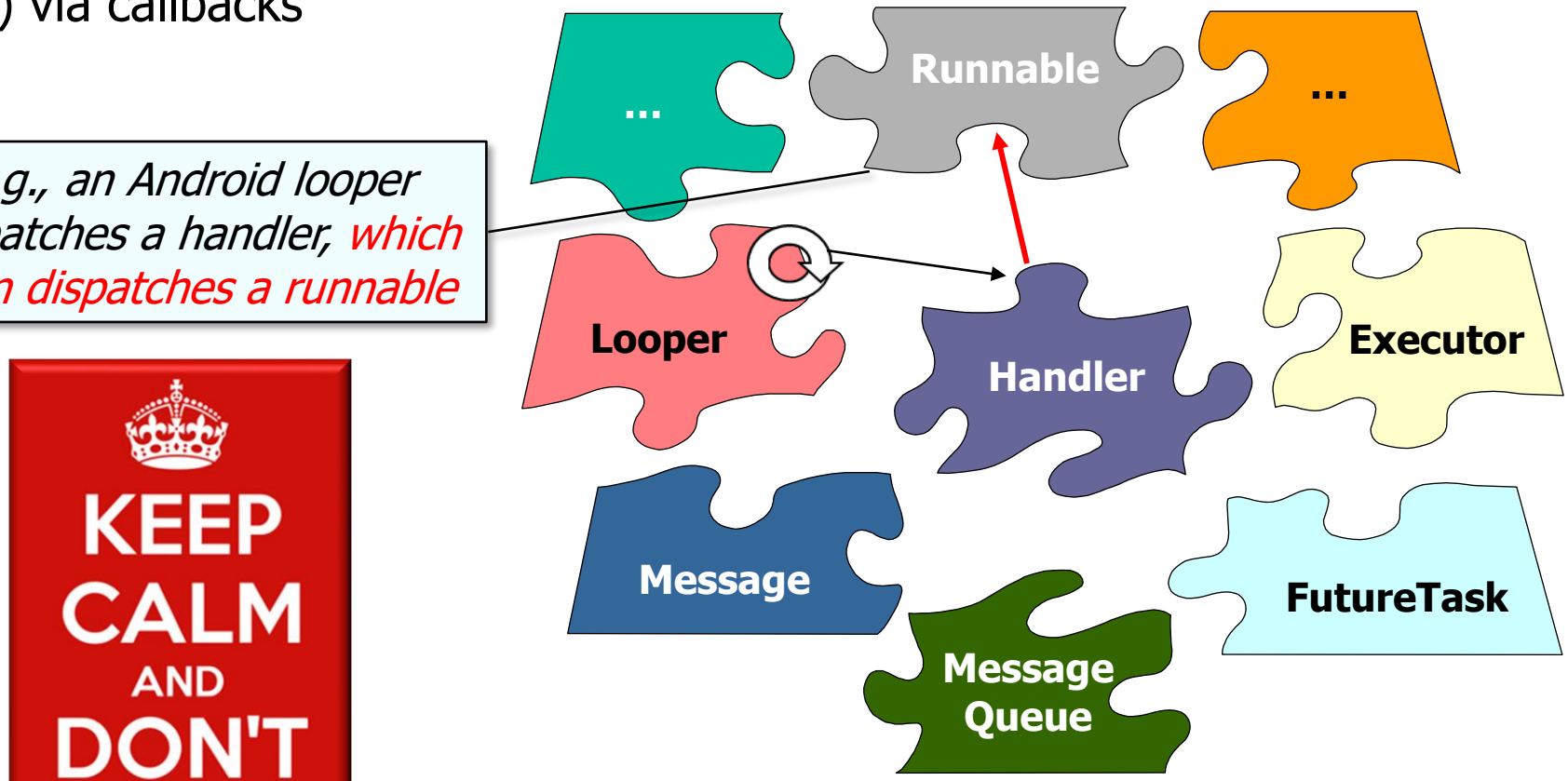

The runnable dispatched via IoC doesn't know/care how/why it was called back

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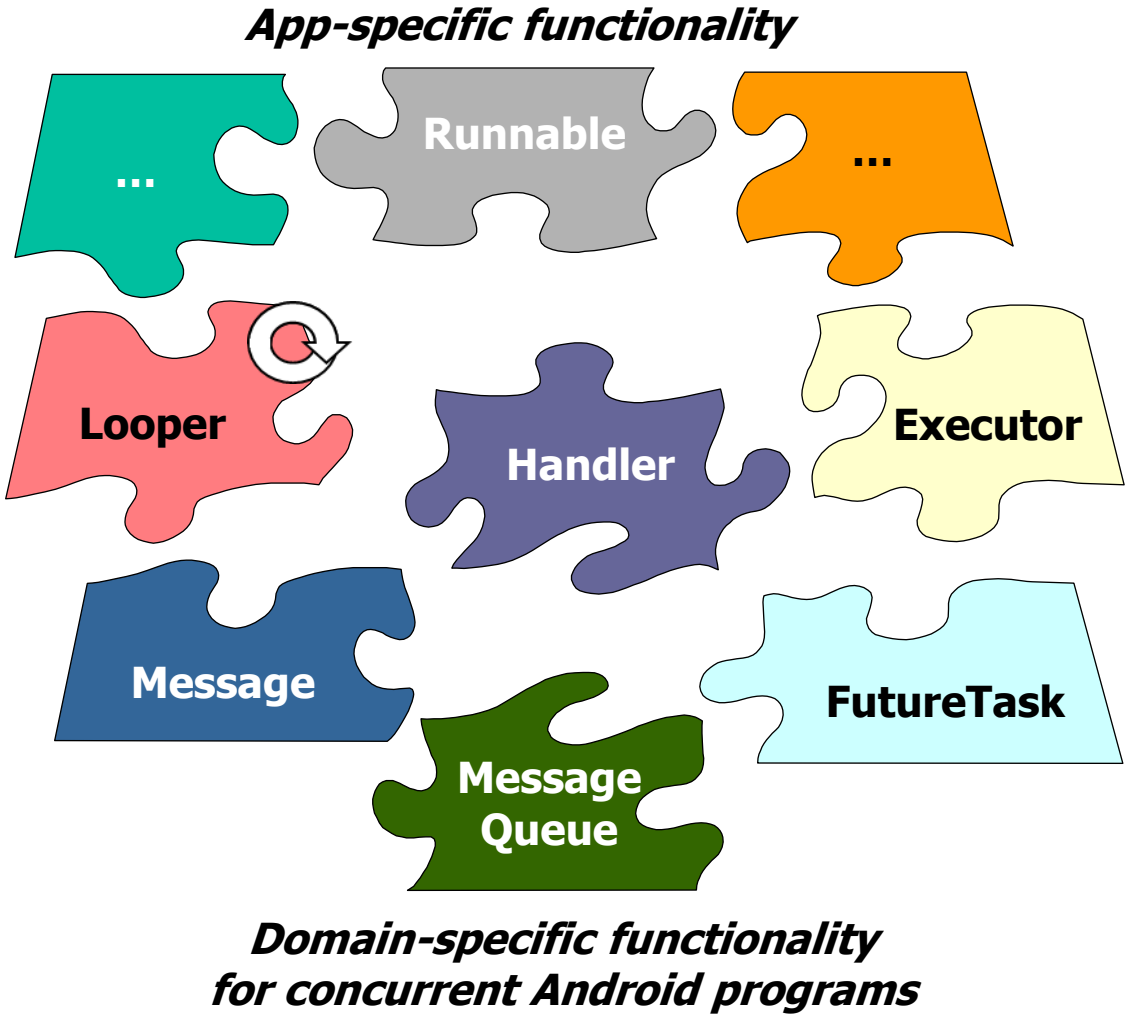
  - Integrated domain-specific structure & functionality



See en.wikipedia.org/wiki/Domain-driven_design

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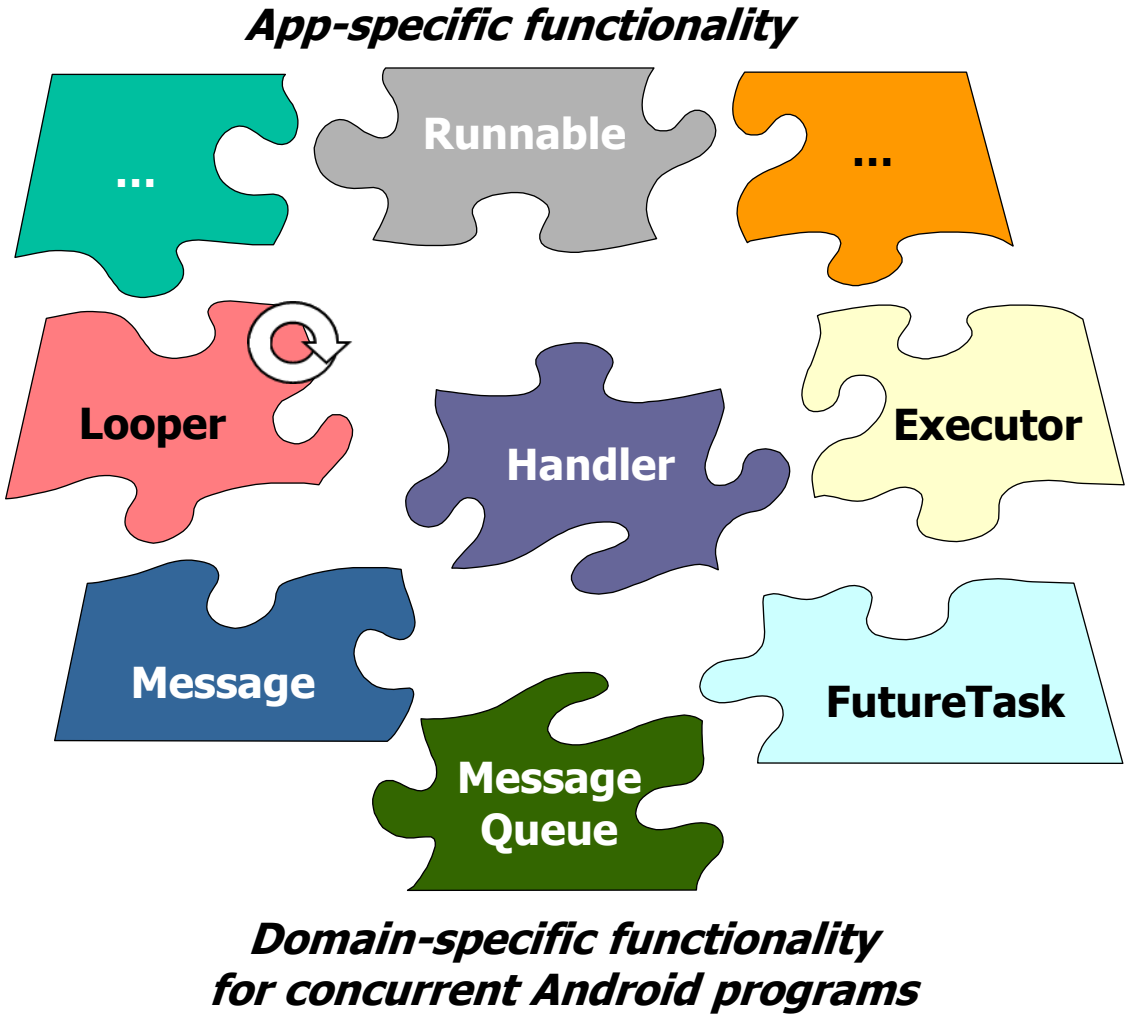

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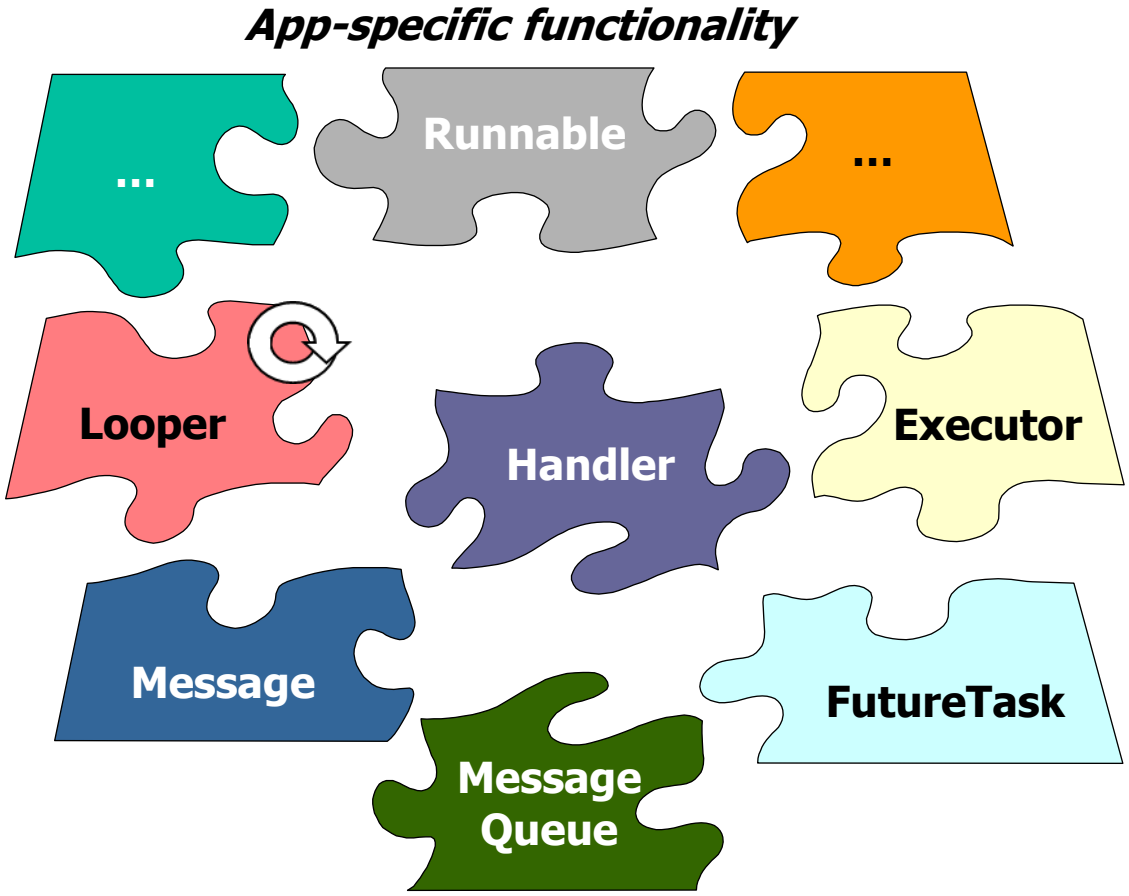

Android's frameworks focus on domains associated with mobile apps & services

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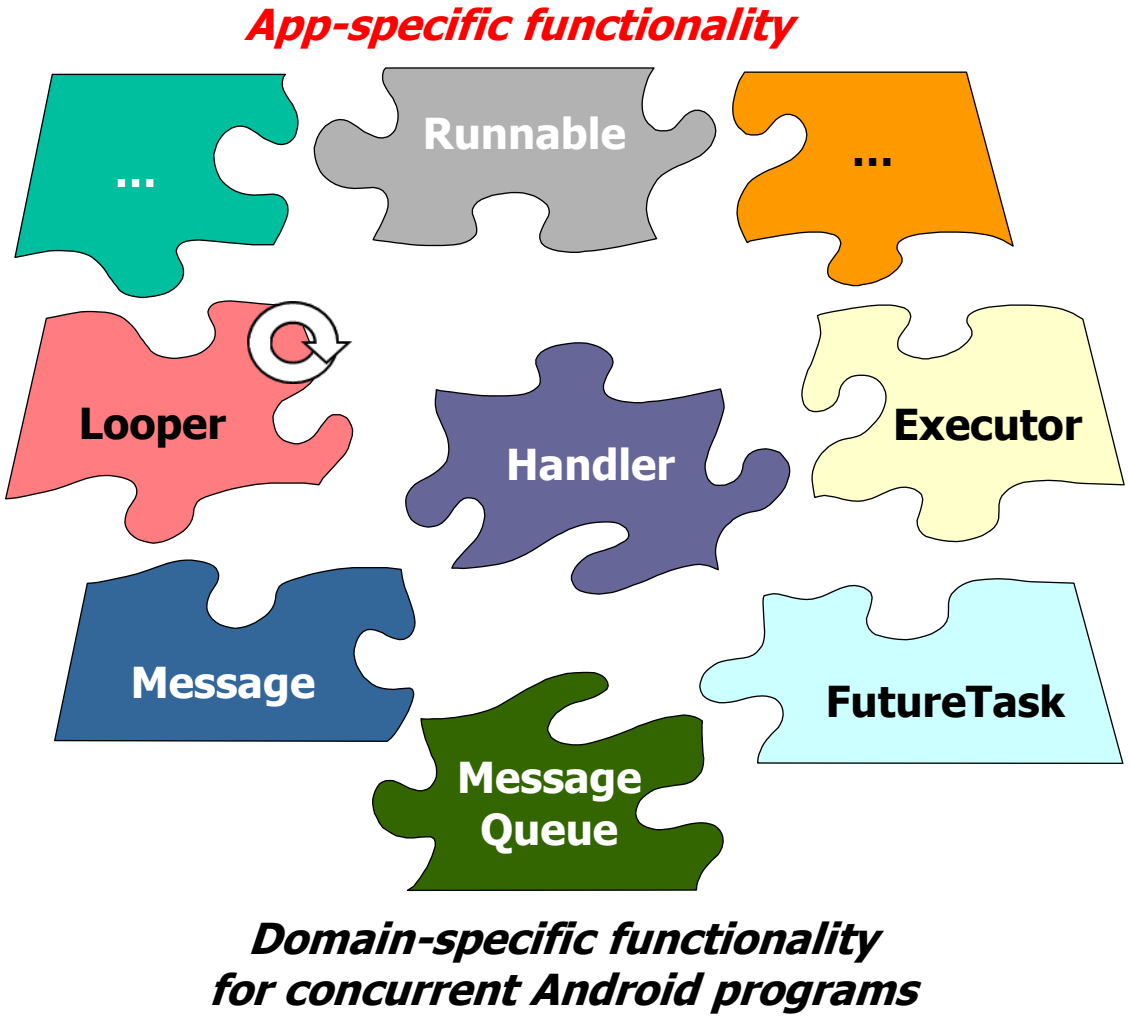

App-specific functionality can reuse domain-specific framework components

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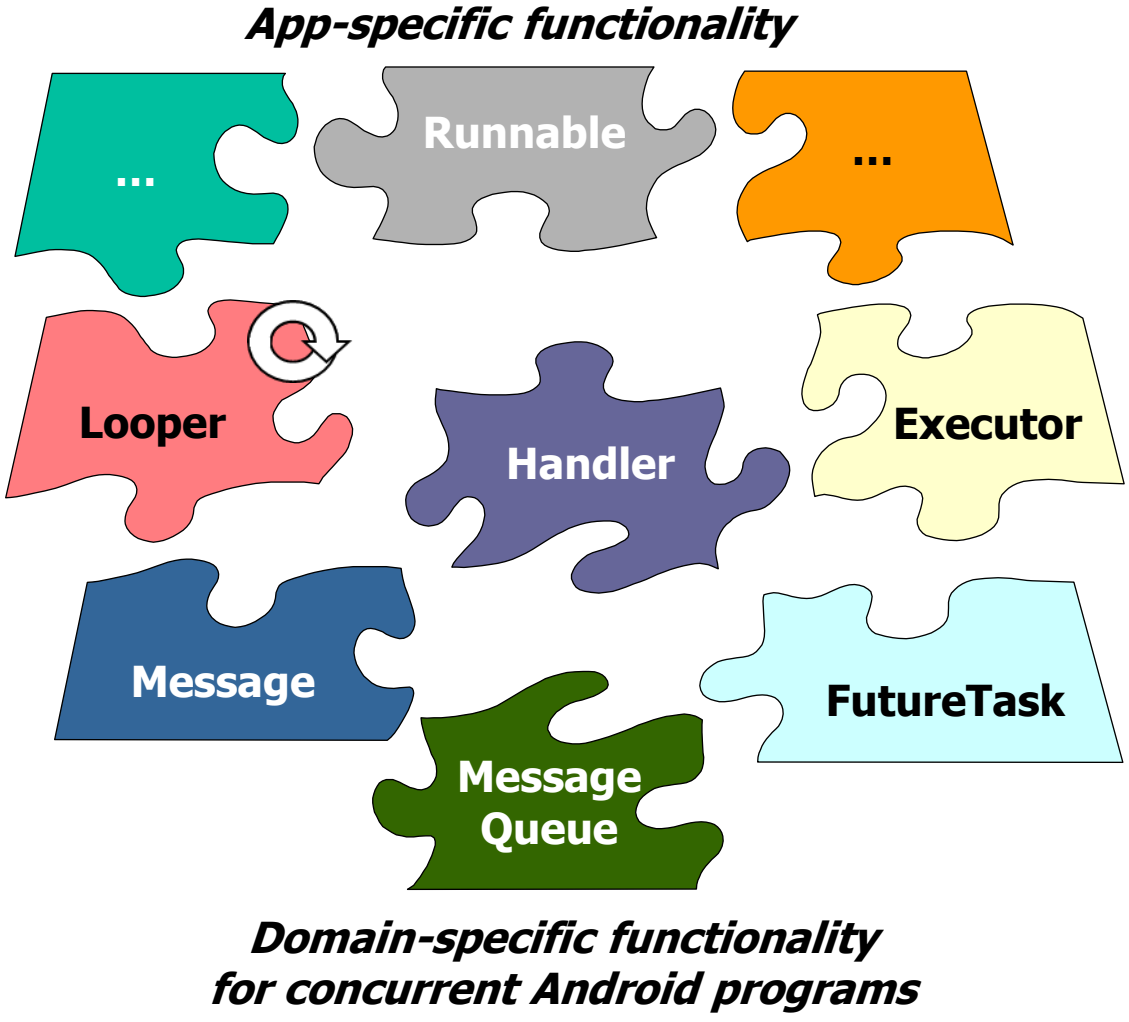
  - Provide semi-complete (portions of) apps



See www.laputan.org/drc/drc.html

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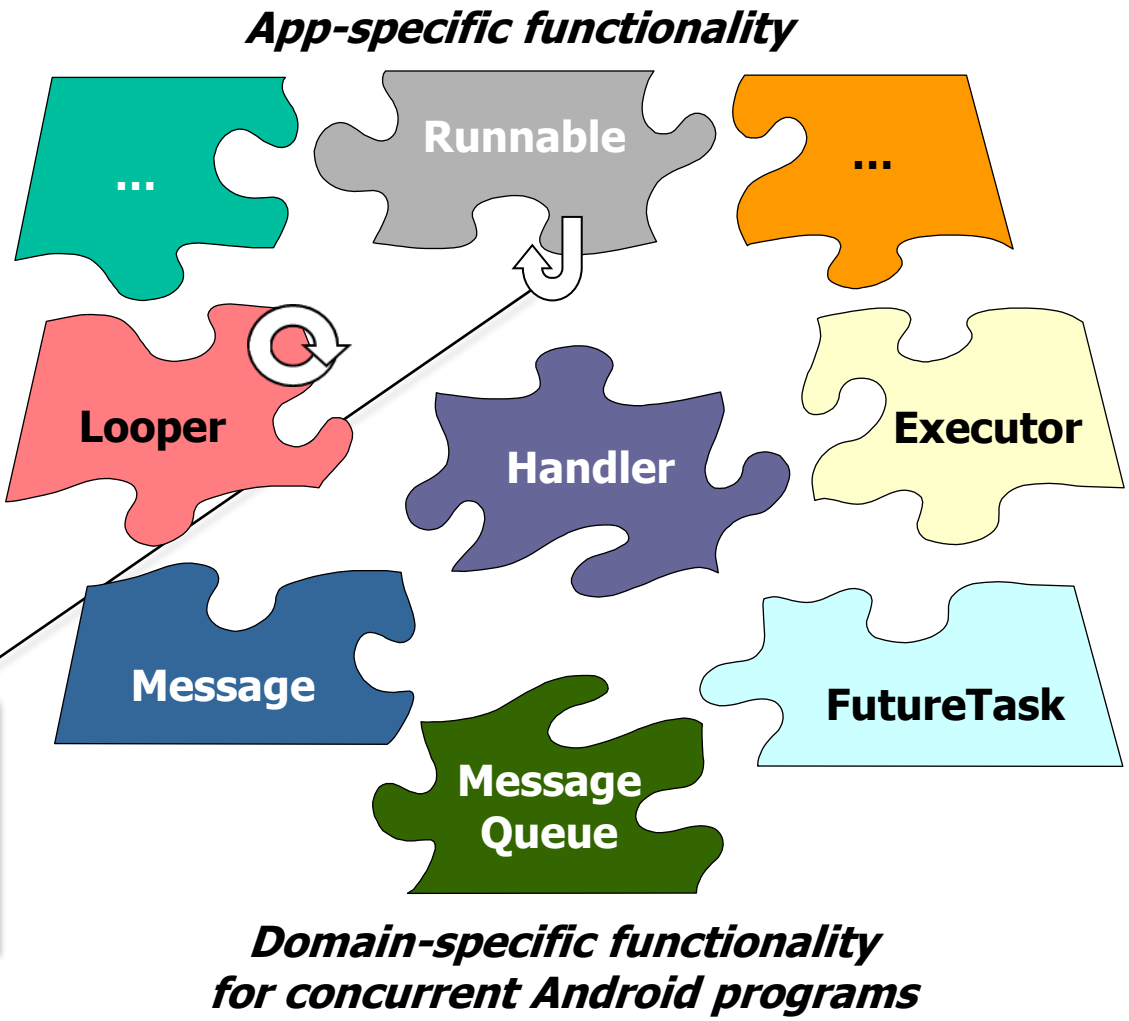

Hook methods implement patterns that customize reusable framework classes to run app-specific logic

See wiki.c2.com/?HookMethod & codebetter.com/davelaribee/2008/06/16/hook-methods

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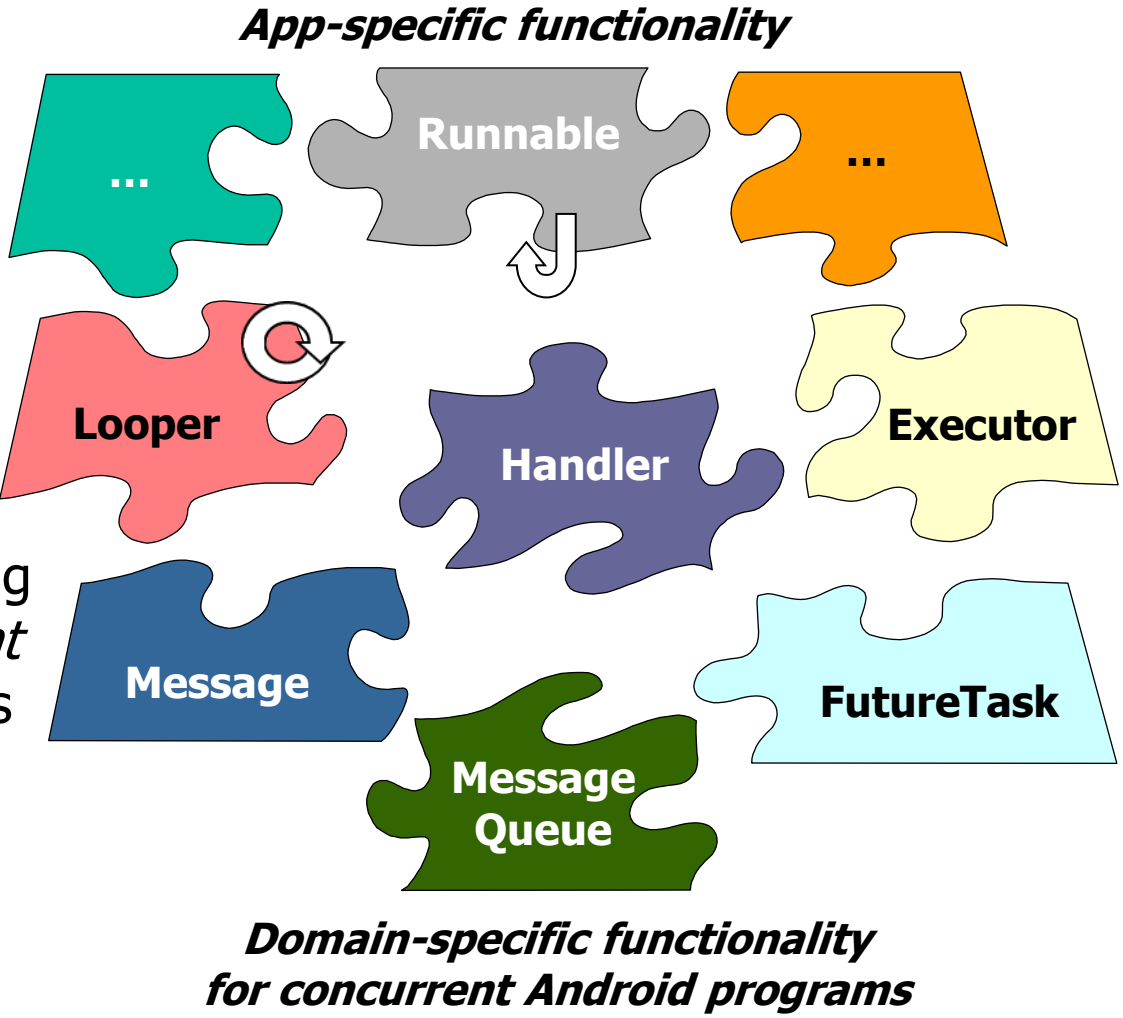

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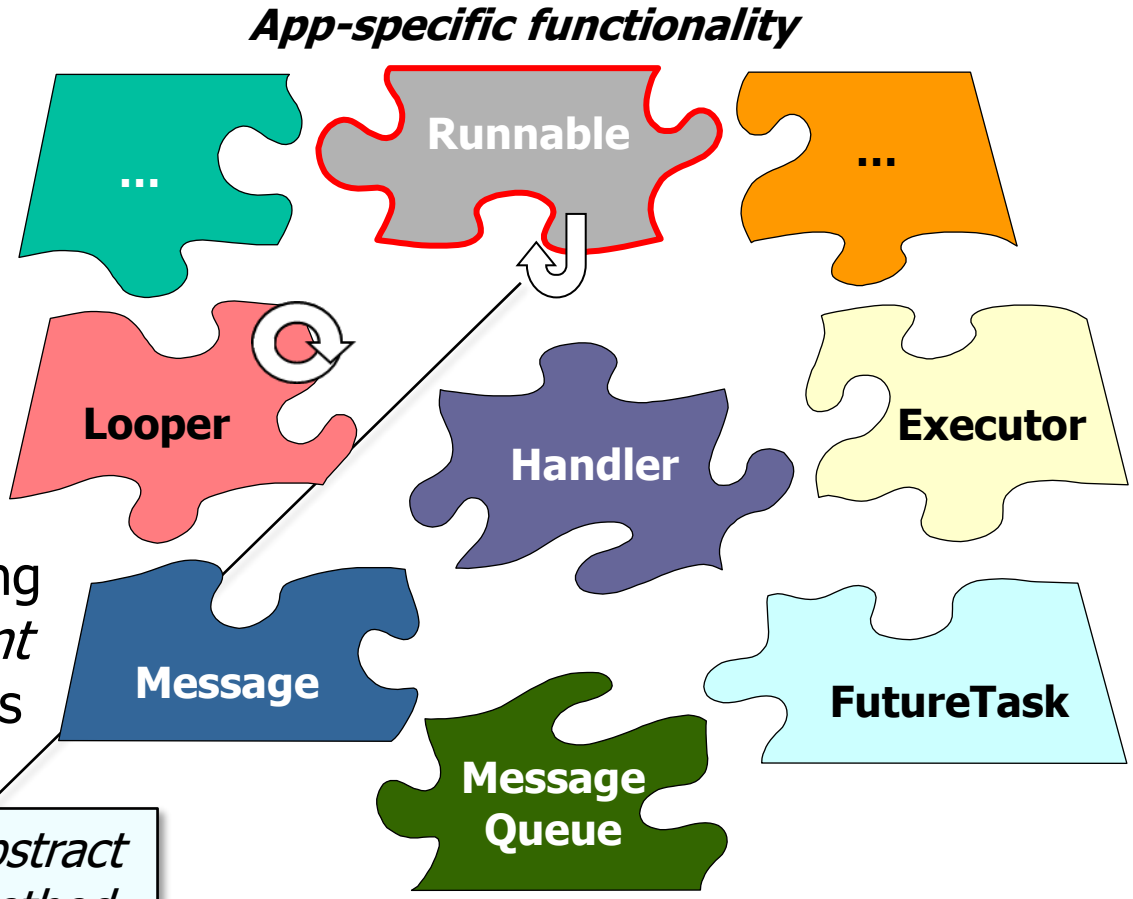

e.g., Runnable is a common abstract interface whose run() hook method supports many concrete variants

See developer.android.com/reference/java/lang/Runnable.html

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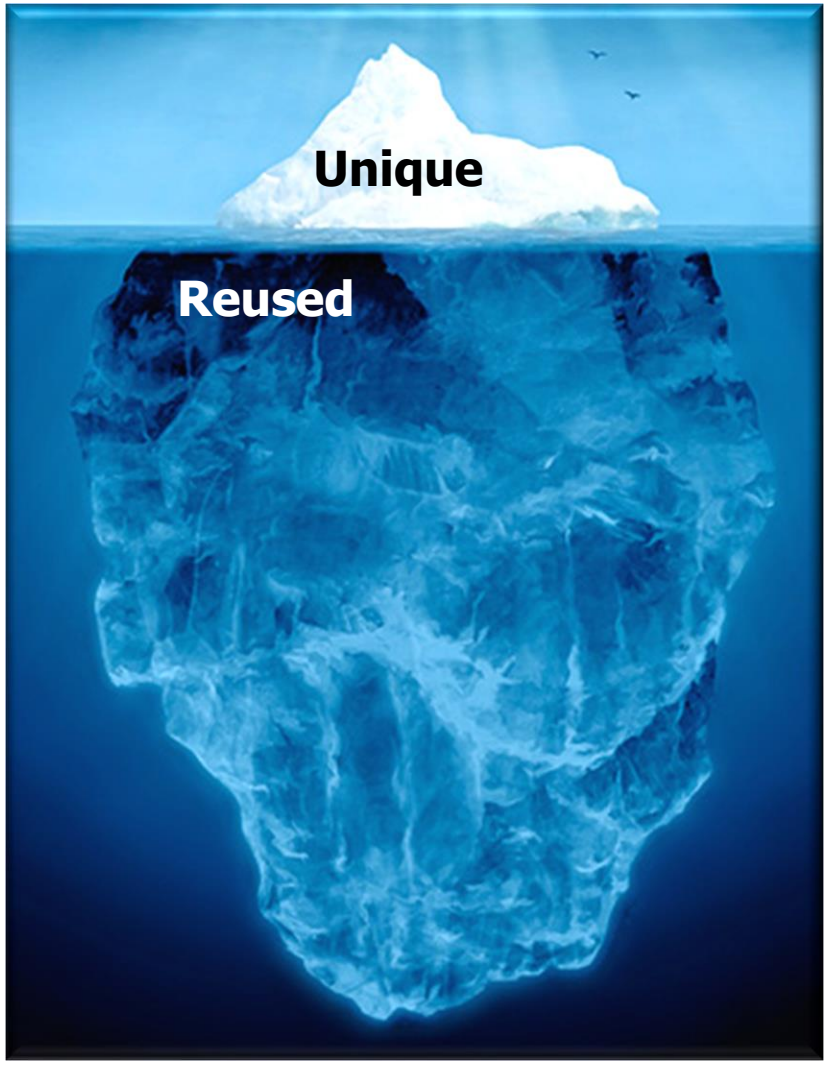

These three key characteristics enable much greater systematic reuse

End of Android & Java Frameworks: Key Characteristics